



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,553	09/30/2006	Ian O'Connell	791305-1010	1710
24504	7590	01/28/2010	EXAMINER	
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP			HOWARD, RYAN D	
600 GALLERIA PARKWAY, S.E.				
STE 1500			ART UNIT	PAPER NUMBER
ATLANTA, GA 30339-5994			2878	
			MAIL DATE	DELIVERY MODE
			01/28/2010	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/599,553	O'CONNELL ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	RYAN HOWARD	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 24 September 2009.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1,2,5-7,10,12,13,16-18,51-59 and 61-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,2,5-7,10,17,18,51-58,61 and 62 is/are rejected.
- 7) Claim(s) 12,13,16,59 and 64-66 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 30 September 2006 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/11/2007; 9/30/2006</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|   | 6) <input type="checkbox"/> Other: _____ .                        |

## **DETAILED ACTION**

1. Examiner notes there is no claim numbered 60 in the pending claims.

### ***Election/Restrictions***

2. Applicant's election without traverse of Group I in the reply filed on 9/24/2009 is acknowledged.

### ***Specification***

3. The disclosure is objected to because of the following informalities: The specification filed 9/30/2006 does not include headings for each of the different sections of the specification.

Appropriate correction is required.

4. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### ***Arrangement of the Specification***

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.

- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A “Sequence Listing” is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required “Sequence Listing” is not submitted as an electronic document on compact disc).

***Claim Objections***

5. Claims 10, 18, and 63 objected to because of the following informalities: The claims contain the limitation ‘and/or’. Claim limitations should only use one conjunction. Appropriate correction is required. For the purpose of examination the claims will be interpreted as including ‘or’.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 7, 10, 51-54, 57, and 62-63 are rejected under 35 U.S.C. 102(b) as being anticipated by Lekowski (5,573,325).

Regarding claim 7, Lekowski teaches a projector (46, figure 2), a frame (53, 55, 56, 58, figure 3) a light source (column 4 lines 4-5) and an at least partially transparent screen (44, figure 2); the frame being arranged to retain the screen under tension (column 3 lines 61-64), such that the tension of the screen can be varied at a plurality of positions along at least one edge of said screen (actuators 92 vary the screen tension by pivoting screen along A-B) such that the screen is substantially wrinkle free; the light

source arranged to illuminate at least part of the apparatus (stage is illuminated column 4 lines 4-5); the screen inclined at an angle (69-55 degrees) with respect to a plane of emission of light from the projector and the screen having a front surface arranged such that light emitted from the projector is reflected therefrom (column 2 lines 38-41) the projector being arranged to project an image such that light forming the image impinges upon the screen such that virtual image is created from light reflected from the screen, the virtual image appearing to be located behind the screen (column 2 lines 35-42), wherein the screen is foil (column 2 lines 33-35) and the frame comprises first (84, figure 4) and second (86, figure 4) retention members arranged to sandwich an edge (64) region of the screen therebetween, the first and second retention members comprise respective openings therethrough arranged to collocate with respective openings in the screen wherein the openings are arranged to receive a fixing means as to clamp the screen between the first and second retention members (90, figure 4).

Regarding claim 10, Lekowski teaches the screen is attached to the frame at the screen's upper and lower edges (55,53).

Regarding claim 51 a projector (46, figure 2), a frame (53, 55, 56, 58, figure 3) a light source (column 4 lines 4-5) and an at least partially transparent screen (44, figure 2); the frame being arranged to retain the screen under tension (column 3 lines 61-64), such that the screen is inclined at an angle (69-55 degrees) with respect to a plane of emission of light from the projector;

the screen having a front surface arranged such that light emitted from the projector is reflected therefrom (column 2 lines 38-41); and

the projector being arranged to project an image such that light forming the image impinges upon the screen such that virtual image is created from light reflected from the screen, the virtual image appearing to be located behind the screen (column 2 lines 35-42), and the frame comprises first (84, figure 4) and second (86, figure 4) retention members arranged to sandwich an edge (64) region of the screen therebetween, and wherein a plurality of fixing means (90, figure 4) pass through the first retention and through the screen and clamp the screen between the first and second retention members (there are a plurality of pairs of retention members [66, figure 55], therefore a plurality of fixing means for each pair of retention members).

Regarding claim 52, Lekowski teaches respective locking means are provided for the fixing means (90, column 3 lines 46-48; a screw is in threaded engagement with 86 and the part of 86 in threaded engagement with screw 90 is the nut).

Regarding claim 53, Lekowski teaches the locking means is provided in the form of nuts, to lock the fixing means into position (90, column 3 lines 46-48; a screw is in threaded engagement with 86 and the part of 86 in threaded engagement with screw 90 is the nut), the fixing means extending through the retention members and the screen (90, figure 4).

Regarding claim 54, Lekowski teaches the first and second retention members comprises a plurality of respective openings (there are a plurality of pairs of retention members [66, figure 55], therefore a plurality of fixing means for each pair of retention members), with the fixing means extending through the openings (90, figure 4).

Regarding claim 57, Lekowski teaches the screen is a foil (column 2 lines 33-35).

Regarding claim 62, Lekowski teaches the screen comprises a partially reflective layer upon the front surface (45, figure 4)

Regarding claim 63, Lekowski teaches the screen is attached to the frame at the screens upper and/or lower edges (53, 55, figure 3).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 2, 5, 6, 55 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lekowski (5,573,325) in view of Spears (US 4,019,656).

Regarding claim 1, Lekowski teaches a projector (46, figure 2), a frame (53, 55, 56, 58, figure 3) a light source (column 4 lines 4-5) and an at least partially transparent screen (44, figure 2); the frame being arranged to retain the screen under tension (column 3 lines 61-64), such that the tension of the screen can be varied at a plurality of positions along at least one edge of said screen (actuators 92 vary the screen tension by pivoting screen along A-B); the light source arranged to illuminate at least part of the apparatus (stage is illuminated column 4 lines 4-5); the screen inclined at an angle (69-55 degrees) with respect to a plane of emission of light from the projector and the screen having a front surface arranged such that light emitted from the projector is reflected therefrom (column 2 lines 38-41); and the projector being arranged to project

Art Unit: 2878

an image such that light forming the image impinges upon the screen such that virtual image is created from light reflected from the screen, the virtual image appearing to be located behind the screen (column 2 lines 35-42), wherein the screen is foil (column 2 lines 33-35) and the frame comprises first (84, figure 4) and second (86, figure 4) retention members arranged to sandwich an edge (64) region of the screen therebetween.

Lekowski does not specify at least one of the first and second retention members comprises an abrasive coating arranged to contact the screen.

Spears teaches a first and second retention members comprising an abrasive coating arranged to contact an object being clamped (column 2 lines 30-32).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the retention system of Lekowski to include the abrasive pad of Spears because the abrasive pad improves the grip of the retention members.

Regarding claim 2, Spears teaches the abrasive coating is sandpaper (column 2 lines 30-32).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the retention system of Lekowski to include the abrasive pad of Spears because the abrasive pad improves the grip of the retention members.

Regarding claim 5, Lekowski teaches the first and second retention members comprise respective openings therethrough arranged to collocate with respective

openings in the screen wherein the openings are arranged to receive a fixing means as to clamp the screen between the first and second retention members (90, figure 4).

Regarding claim 6, Lekowski teaches the frame is arranged to retain the screen under tension (column 3 lines 61-64), such that the tension of the screen can be varied at a plurality of positions along at least one edge of said screen (actuators 92 vary the screen tension by pivoting screen along A-B) such that the screen is substantially wrinkle free.

Regarding claim 55, Lekowski does not teach an abrasive surface is provided on at least one of the retention members to increase the grip between the retention member and the screen, thereby reducing the likelihood of the screen slipping when held by the retention member.

Spears teaches an abrasive surface is provided on at least one of the retention members (column 2 lines 30-32) to increase the grip between the retention member and the screen, thereby reducing the likelihood of the screen slipping when held by the retention member.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the retention system of Lekowski to include the abrasive pad of Spears because the abrasive pad improves the grip of the retention members.

Regarding claim 56, Spears teaches the abrasive coating is sandpaper (column 2 lines 30-32).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the retention system of Lekowski to include the abrasive pad of Spears because the abrasive pad improves the grip of the retention members.

10. Claims 17 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lekowski (5,573,325) in view of Maass (US 5,865,519).

Regarding claims 17 and 61, Lekowski does not teach the screen is inclined at approximately 45 degrees to the plane of emission of light from the projector.

Mass teaches the screen is inclined at approximately 45 degrees to the plane of emission of light from the projector (column 2 lines 28-29).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the projection system of Lekowski to include the screen inclination system of Maas because the screen inclination system of Maass improves portability (column 3 line 20)

Regarding claim 58, Lekowski teaches the screen is a polymeric transparent foil (column 2 lines 33-35) that is held taught and substantially wrinkle-free by the retention members (column 3 lines 61-64; 84, 86, figure 4), the retention members having generally parallel faces which clamp an edge region of the foil between them (64, figure 4), and wherein individually variable foil tensioning mechanisms are provided at spaced apart locations around the periphery of the foil to enable the foil to have tensioning force independently varied at the said spaced apart locations around the periphery of the foil

(92, figure 4), and wherein the first and second retention members are connected to one or more flexible tensioning means (94 is flexible (pneumatically actuatable)).

Lekowsky does not teach flexible tensioning means extends from the fram or fixed mounting points to the foil-gripping members, the foil, flexible tensioning means and the frame or fixed mounting points lying in a common inclined plane, with the tension on the foil being applied in the plane of the flexible tensioning means, and the foil.

Maass teaches a flexible tensioning means, which extends from the frame or fixed mounting points to the foil-gripping members, the foil flexible tensioning means and the frame or fixed mounting points lying in a common inclined plane, with the tension on the foil being applied in the plane of the flexible tensioning means, and the foil (24, 20, figure 5).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the projection system of Lekowski to include the screen inclination system of Maas because the screen inclination system of Maass improves portability (column 3 line 20)

11. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lekowski (5,573,325) in view of Beaver (US 5,685,625).

Regarding claim 18, Lekowski does not specify the light source is located to the rear of the screen, along a top edge of the frame and/or along either side of a stage.

Beaver teaches a light source along a top edge of the screen, which upon modification with Lekowski would be the top edge of the frame (30, figure 1; column 3 lines 55-58).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the projection system of Lekowski to include the light source along the top of the screen as taught by Beaver because the light source along the top of the screen prevents the illumination from interfering with projection (column 3 lines 55-58).

### ***Allowable Subject Matter***

12. Claims 12-13, 16, 59, and 64-66 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 12, 59 and 64, Prior art does not teach a screen tensioned by tension straps. The closest Prior art to the claimed tension straps is Yang (US 6,129,649) which teaches tension straps, however these are used to secure a trampoline to a frame and this is not considered analogous to the art of semi-transparent projection screens.

### ***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN HOWARD whose telephone number is (571)270-5358. The examiner can normally be reached on Monday-Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, GEORGIA EPPS can be reached on (571)272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RYAN HOWARD/  
Examiner, Art Unit 2878  
1/16/2010

/Georgia Y Epps/  
Supervisory Patent Examiner, Art Unit 2878